

CLAIMS

1. A recording apparatus comprising:

an encoding means for encoding an input content;

a format organizing means for dividing content information resulted from encoding of the input content by the encoding means into access blocks each including a succession of frames and generating management information for the content information; and

a writing means for writing the content data in units of an access block into an data area of an recording medium while writing the management information into a management area of the recording medium,

the format organizing means generating the access block so that the leading one of the frames of each access block will be a base point of decoding and also recording-position information and output-time information for each frame; and

the writing means writing the recording-position information for each access block and output-time information for the leading frame into the management area while writing recording-position information and output-time information for frames other than the leading frame of each access block along with each block into the data area.

2. A recording medium in which encoded content information is to be recorded, the recording medium including:

a data area in which the content information is recorded in units of an access block each including a succession of frames; and

a management area in which management information for the content information is to be recorded,

the leading one of the frames of each access block being taken as the base point of decoding;

the management area having recorded therein the recording-position information for each access block and output-time information for the leading block of each access block; and

the data area having recorded therein the recording-position information for frames other than the leading one and output-time information for the frames other than the leading one along with each access block.

3. A reproducing apparatus for playing a recording medium having encoded content information recorded therein, the apparatus comprising:

a reading means for reading data recorded in the recording medium;

a storage means for storing management information read from the recording mean;

a decoding means for decoding content information read from the recording medium and outputting content; and

a controlling means for controlling the reading and outputting of content information,

the recording medium including a data area in which content information is recorded in units of an access block including a succession of frames, and a management area in which management information for the content information, the leading frame of the access block being taken as a base point of decoding, recording-position information for each access block and output-time information for the leading block of each access block being recorded in the management area, recording-position information for frames other than the leading one and output-time information for the frames other than the leading one being recorded along with each access block in the data area;

the controlling means functioning to:

read recording-position information for each access block and output-time information for the leading frame of each access block, pre-recorded in the management area, before reading content information recorded in the data area and storing the recording-position information and output-time information into the storage means,

identify, for reproducing the leading frame of the access block, the recording position of the reading frame on the basis of recording-position information for the access block and output-time information for the leading frame of each access block, stored in the storage means; and

read, for reproducing a frame other than the leading frame of the access block, recording-position information and output-time information for the object frame from

the data area of the recording medium on the basis of recording-position information for an access block including the object frame stored in the storage means to identify the recording position and output time of the object frame on the basis of the read recording-position information and output-time information.

4. A recording method comprising the steps of:

encoding an input content;

dividing information resulted from encoding of the input content into access blocks each including a succession of frames of which the leading one is taken as a base point of decoding;

generating recording-position information and output-time information for each frame;

writing the content information in units of an access block into a data area of a recording medium;

writing recording-position information for each access block and output-time information for the leading frame into a management area of the recording medium; and

writing recording-position information and output-time information for frames other than the leading frame of each access block along with each access block into the data area.

5. A reproducing method of reproducing content information, in which content information is read from a recording medium and outputted, the recording medium

including a data area in which content information is recorded in units of an access block including a succession of frames, and a management area in which management information for the content information, the leading frame of the access block being taken as a base point of decoding, recording-position information for each access block and output-time information for the leading block of each access block being recorded in the management area, recording-position information for frames other than the leading one and output-time information for the frames other than the leading one being recorded along with each access block in the data area, the method comprising the steps of:

reading recording-position information for each access block and output-time information for the leading frame of each access block, pre-recorded in the management area, before reading content information recorded in the data area and storing the recording-position information and output-time information into a memory,

identifying, for reproducing the leading frame of the access block, the recording position of the reading frame on the basis of recording-position information for the access block and output-time information for the leading frame of each access block, stored in the memory; and

reading, for reproducing a frame other than the leading frame of the access block, recording-position information and output-time information for the object frame from the data area of the recording medium on the basis of recording-position information

for an access block including the object frame stored in the memory to identify the recording position and output time of the object frame on the basis of the read recording position information and output time information.